

102101-59924860

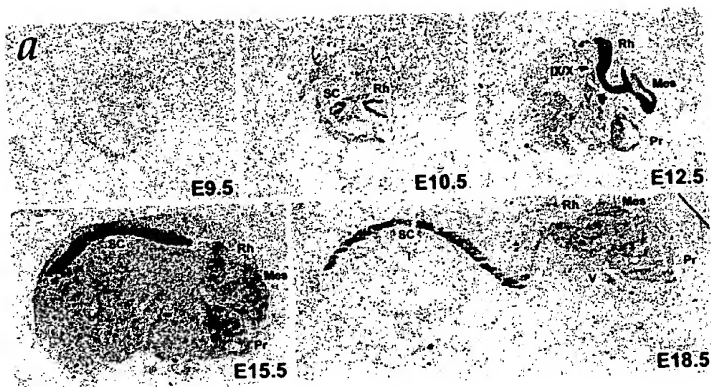


FIG. 1A

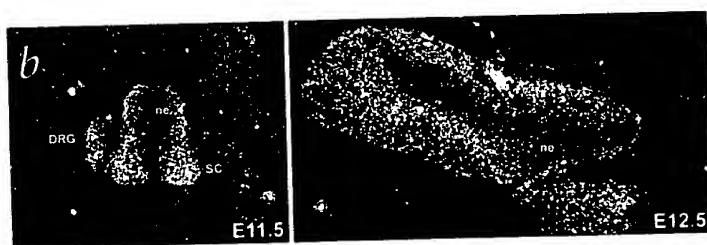


FIG. 1B

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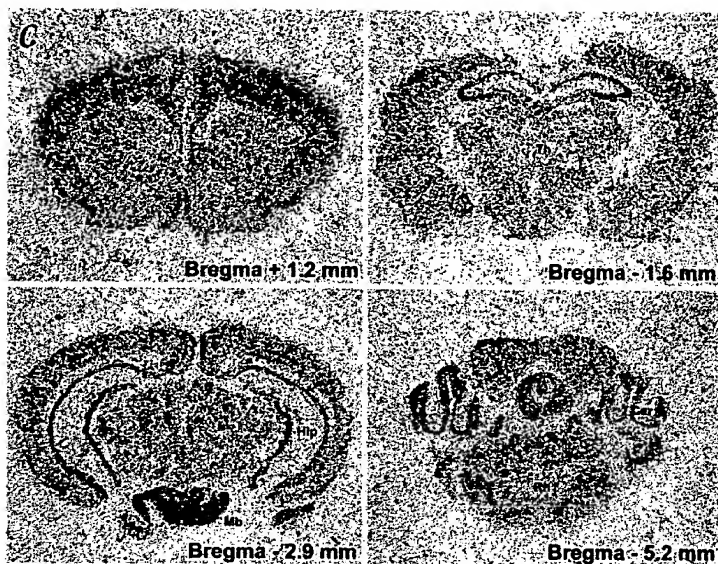


FIG. 1C

FIG. 2A

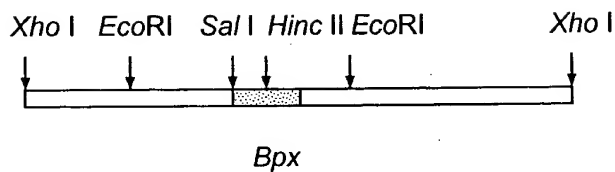


FIG. 2B

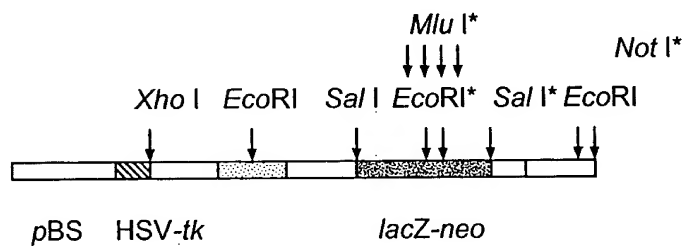
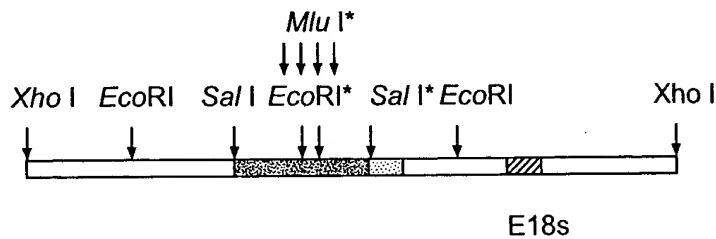


FIG. 2C



* INTRODUCED SITES

0984656 10202

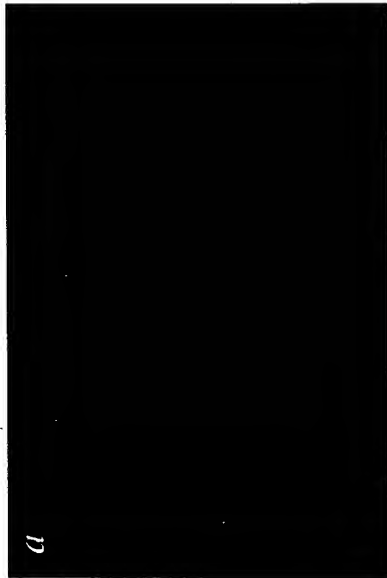


FIG. 3A

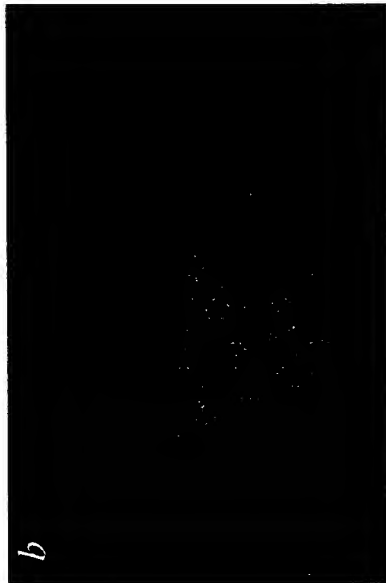


FIG. 3B

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FIG. 3C

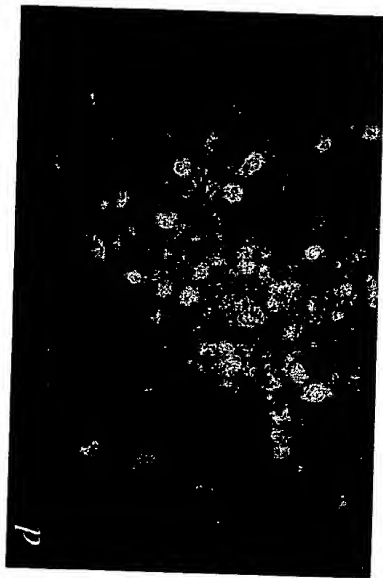


FIG. 3D

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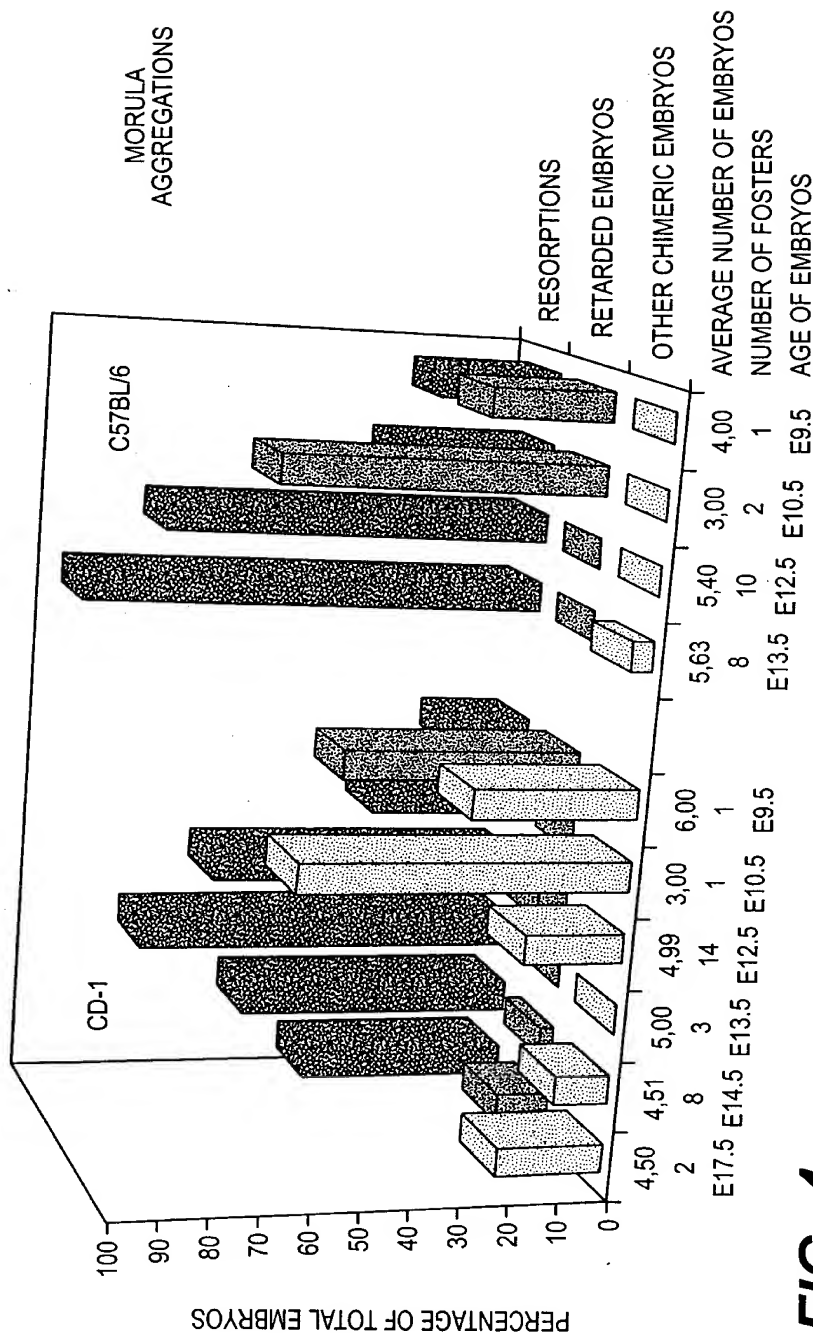


FIG. 4

E12.5



FIG. 5E



d

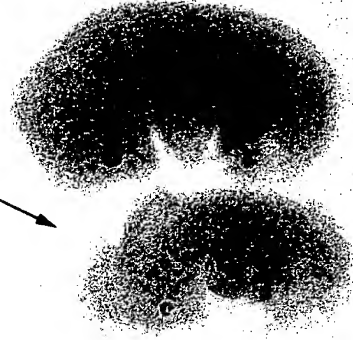


FIG. 5A FIG. 5B FIG. 5C

FIG. 5D

E17.5

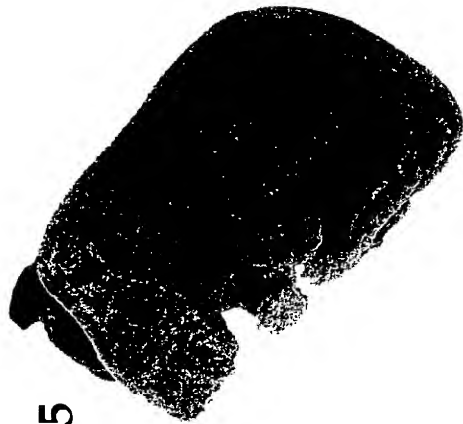


FIG. 5F

E14.5

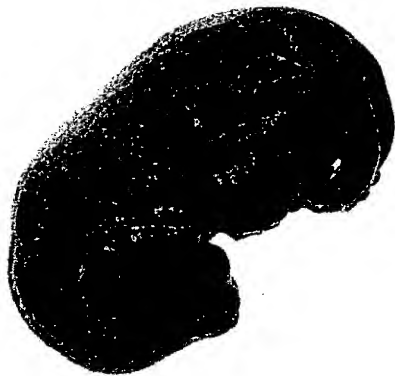


FIG. 5G

E10.5



E9.5

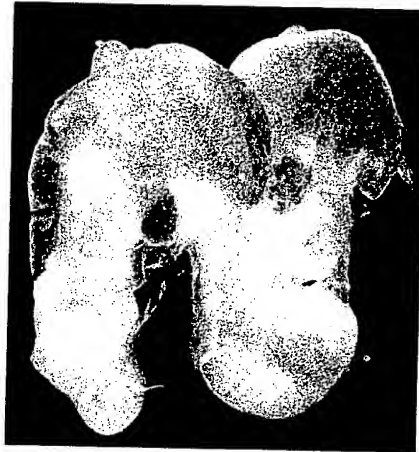


FIG. 5H

FIG. 5I



FIG. 6A

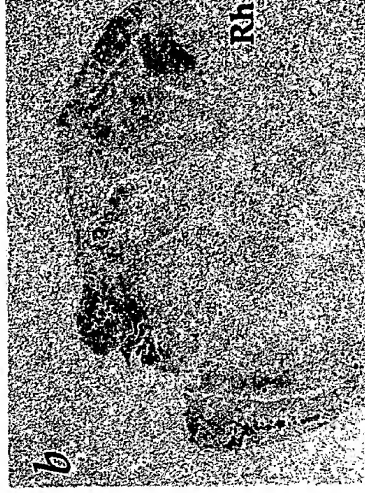


FIG. 6B

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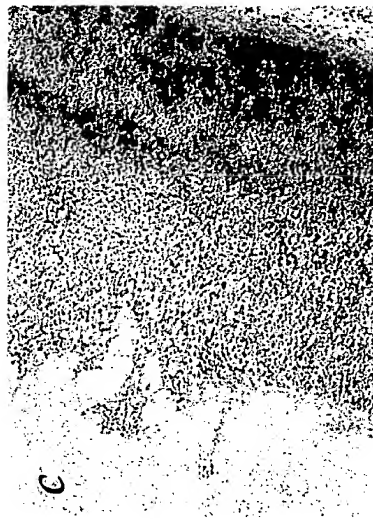


FIG. 6C



FIG. 6D

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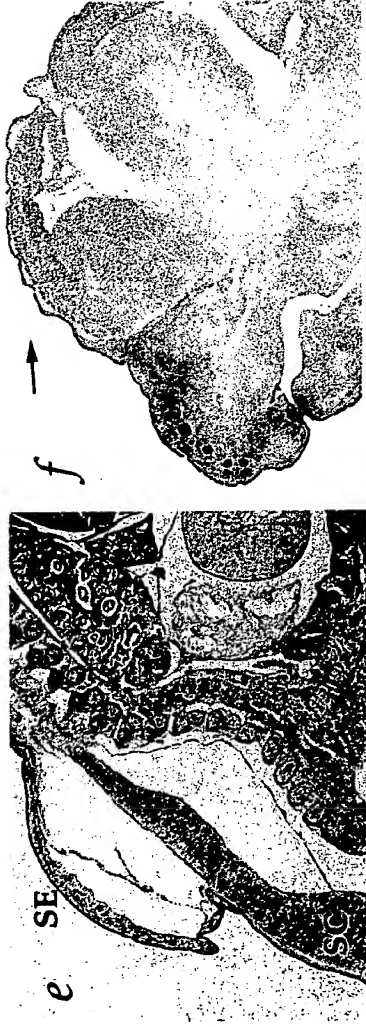


FIG. 6E

FIG. 6F

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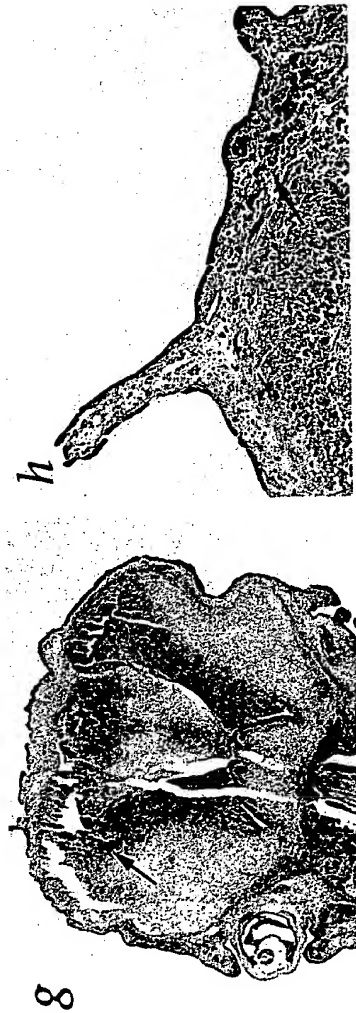


FIG. 6H

FIG. 6G

SEQUENCE CLONE *Bpx* PROMOTER MURIN SPEI-SALI FRAGMENT

ACTAGTCATATAGCTGGCTCTTTTACAAAAGGCTTCAACACCCCTCCCCC
 CACACTTTAGTCATCCGTCATCTCTTCCTCATCAGGAAATATTATGAGAA
 TTTTCCCATTTAAATCACACAGGTTGTGAAAATTACAGAAACCAGGGTA
 CAGAATATTTAAACCACTGTCTAGTTACATCATCCAAAGGCCACCTATGCT
 TATTTTTGGTAATTTTAAACCTCAAAGGATCTCTTTGTGGGCTCCTCCACT
 ACCCTCCTCTCTTTCCAGAGCCTCAGGTTATAACCAAAGGGATAGACTA
 AAGACAATCCAGTACCTTGCCCATTTTTTTTCATTCCCTGTCACTGTTTCCA
 TATAGCTCTTTTGAAATTATGAACATATAGTATCAGTTGAAAACGGAATG
 AATGATACTGCATTTCTGCAAAATCCACAGGCTATAGGAGTGGGAAGGCAAG
 AGCCATAGGTGGAGGAATCAGCCATATTAGAGAATCTGGGAAGGCAAG
 AGGTGTTGAAATTTTGATTCTACTAATTTTACTGGCTCAGGATTGTGTC
 AATCACTGCAGCCTGGCAAATGAGATTAGAGAAGAGTCTGGGAGGGA
 AGGGGTGACGCAGCAACCTGCATACACTTAAAAAAGAGCTGAGAG
 ACAACTGCGTAATCATACTGCGGCACCACTTCTCCATCCCTCCGCCCCC
 GATGGCTGGAGCAGCTGCTTGGGAGGTCTGCCACTGCGGCTCTCTG
 CAGTCTCTAGCCTGTTCTTCAGGGCCTAGAGTCTCCGCCAGACAGCCG
 GTTTCATTCTGCTATATCCAGCTTCAGACCGTCTTTTATACTGCTTGCTG
 CCTGCCATCAGTGCAGCCGCCGCCCTCTTGTTTCATCTCTGCCAGATC
 ATCGCGCATCTGCTGTATTGGTGAGTCTTCTGCGGAGGTGAGGTCTCCT
 GATCTGCGGGCTTAGCCACCATAAGTGCAGGCGATCGTTTGAAAACAAT
 GGCTGAATCAGTCGACCTCGAGGGGGGGCGTACCTTGCCCATTTTTTTCA
 TTCCTTGTCAGTGTTCATATAGCTCTTTTGAAATTATGAACATATAGTA
 TCAGTTGAAAACGGAATGAATGATACTGCATTTCTGCAAAATCCACAG
 GCTATAGGGTGGAAGATGAGCCATAGGTGGAGGAATCAGCCATATTAGA
 GAATCTGGGAAGGCAAGAGGTGTTGAAATTTTGATTCTACTAATTTA
 CTGGCTCAGGATTTGTCAATCACTGCAGCCTGGCAAATGAGATTAGAGA
 AGAGTCTGGGAGGGAAGGGGTGACGCAGCAACCTGCATACACTTAA
 AAAAAAGAGCTGAGAGACAACCTGCGTAATCATACTGCGGCACCACTTCC
 TCCATCCCTCCGCCCCCGAGTGGCTGGAGCAGCTGCTTGGGAGGTCTG
 CCCACTGCGGCTCTCTGCAGTCTCTAGCCTGTTCTTCAGGGCCTAGAGT
 CTCGCCCCAGACAGCCGTTTCAATTCTGCTATCCAGCTTCAGCACCGT
 CTTTTATCCCCACTGCTTGCTGCCCTGCCATCAGTGCAGCCGCCGCCCT
 CTTGGTTCATCTCTGCCAGATCATCGGCATCTGCTGTATTGGTGAGTCT
 TCCTGCGGAGGTGAGGTCTCCTGATCTGCGGGCTTAGCCACCATAAGT
 CAGGCGATCGTTTGAAAACAATGGCTGAATCAGTCGAC

[SEQ ID NO:1]

FIG. 7

SEQUENCE *Bpx* MURIN cDNA IDENTICAL TO GENOMIC DNA

GTACCTTGCCCATTTTTTTTCATTCCCTTGTCAGTGTTCATATAGCTCTTTT
GAAATTATGAACATATAGTATCAGTTGAAAACGGAATGAATGATACTGC
ATTTCTGCAAAATTCCACAGGCTATAGGGTGGAAGATGAGCCATAGGTG
GAGGAATCAGCCATATTAGAGAATCTGGGAAGGCAAGAGGTGTTGAAAT
TTTGATTCTACTAATTTACTGGCTCAGGATTTGTCAATCACTGCAGC
CTGGCAAATGAGATTAGAGAAGAGTCCTGGGAGGGAAGGGGTGACGCA
GCAACCTGCATACACTTAAAAAAAAGAGCTGAGAGACAACTGCGTAAT
CATACTGCGGCACCAAGTTCCTCCATCCCTCCGCCCCGAGTGGCTGGAG
CAGCTGCTTGCGGAGGTCTGCCACTGCGGCTCTCTGCAGTCTCTAGCCT
GTTCTTTCAGGGCCTAGAGTCTCCGCCCAGACGCGTTTCAATTCTGC
TATCCCAGCTTCAGCACCGTCTTTTATCCCCACTGCTTGCTGCCCTGCCATC
AGTGCAGCCGCCGCCGCTCTTGTTTCATCTCTGCCAGATCATCGCGCAT
CTGCTGTATTGGTGAGTCTTCTGCGGAGGTGAGTCTCCTGATCTGCGG
GCTTAGCCACCATAAGTGCAGGCGATCGTTTGAAAACAATGGCTGAATC
AGTCGACCATAAAGAACTGTCTGAATCCAACCAAGAAGAGCTTGGCAGC
CAGGTAATGGCGGAGGGGCCCCGGGAAAGTCAGGACCGCAGTGAAGGT
GTCTCCATTGAGCCTGGAGATGGCGGGCAACATGGTGAAGAAACCGTGG
CTGCTGGAGTAGGGGAAGAGGGGAAAGGTGAAGAAGCTGCTGCAGGGT
CTGGGGAAGATGCTGGGAAGTGCGGAGGCACTGATGAGGACTCAGACT
CAGACCGTCCAAAAGGACTTATCGGTTATCTTTTAGATACCGATTTCGTT
GAAAGTCTCCAGTGAAAGTTAAGTGCCGAGTGCTAGCTCTTAAAAAGC
TTCAAACAAGAGCTGCCCATTTGGAATCGAAATTCCTGAGGGAATTTTCAT
GACATTGAAAGGAAGTTTGCTGAAATGTACCAACCCTTACTAGAAAAAA
GACGACAGATCATCAATGCAGTCTATGAGCCACAGAAGAGGAATGTGA
GTATAAATCGGACTGTGAGGACTATTTTGAGGAGGAGATGGATGAGGAG
GAAGAGACTAACGGCAACGAAGACGGTATGGTGCATGAATACGTGGAT
GAAGATGATGGTTATGAGGACTGTTATTATGATTATGATGACGAGGAAG
AAGAGGAGGAGGAAGATGACAGCGCTGGGGCCACCGGAGGAGAAGAG
GTTAACGAAGAGGATCCTAAGGGGATTCGGGATTTTTGGTTGACTGTTTT
AAAAATGTTGAAGCACTCACTCCTATGATTAAGAAATATGATGAGCCT
ATTCTGAAGCTGCTGACAGATATTAAAGTGAAGCTTTCGGATCCCGGGG
AGCCTCTCAGCTTCACACTCGAATTTCACTTCAAGCCCAATGAATATTTT
AAAAATGAGCTGTTGACAAAGACTTATGTGCTGAAGTCAAAGCTTGCAT
GCTACGATCCCCACCCTTATAGGGGAAGTCCATTGAGTACGCCACTGG
CTGCGACATAGATTGGAACGAAGGGAAGAATGTCACTTTGAGAACCATC
AAGAAGAAGCAGAGACATCGCGTCTGGGGAACTGCCAAGCTGTGACTG
AAGATTTTCCCAAGGACTCTTTCTTCAATTTCTTCTCCTCATGGGATCA
GCTTAAATGGAGGGGATGAAAATGATGATTTTTTACTTGTCATAATCTG

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FIG. 8

CGTACTTACATAATTCCAAGATCAGTGTTATTTTTCTCAGGAGATGCACT
TGAATCTCAGCAGGAGGGTGTAGTTAGGGAAGTTAATGACGAAATATAT
GACAAAATTATTTATGATGATTGGATGGCTGCAATTGAAGAGGTTAAAG
CCTGTTGCAAAAATCTTGAGGCATTAGTAGAAGATATTGATCGTTAAAAC
AGAGTAGATGCTTTTGAAACTAACTGCTCTACATGCAGTTACTGAAGACA
TAAGCAGTTAATATTGTCTTGTGTTCTGCATTTTTTCCTGTCATGCCAGTT
TAAAAATTCAAATACTAATTAATCTGACCTTGCATTGTAGTGGTATGATG
TTTTCAAGACATGTAGACTGTGATAAATGATTAAAGACATTAATAGTCTGT
AGTATAACCCTTCTGAAGTCCTTGTGCCATGTATCTATTAATCTGTGGCT
GTGAATATTATTAGAAGTGCTAAATGAGATTATTTGTTGCAAAGAAAAT
ATTGGAAACCTACCTAAGAGTGCTTTGCTATTTTCCCCCTTATCCTCTTAG
TGCTTTGGCCAATTGACTTTATTGTGCCTGCTTCATTTTGCAGTAAATATG
CAGTAGAATTTAAACTTGAATGCCTAAGAGGCCTGCATATGATTGAGA
ATTCAGGCAAAATCATATTTATTATTGATAACAGCTAGTGCAAGGCTTC
TGATTGTATGTGACTGTGATAAATAATAAACTCAATTGTATTGAAGTTA
CTGTTTATCATTGACATGTGAGTTACAGTATTTTCAAATGTTGCAAATATT
GTCCTGTGTAATTGTGTAACTGTGATTACAGTGACATTTTTTTCATAAT
ATACTGAATCATTCATTGAAATGGACACTTTACCATTTCTGAAAATACAT
TTCATATTCTGTTCATTCACTGAAAAATAAATGAATAAAAAATT

[SEQ ID NO:2]

FIG. 8
CONTINUED

Bpx HUMAN cDNA IDENTICAL TO GENOMIC DNA

TGTTAGAGAGCCTGGGAAGGTGAGcAGAGcTGAAACTTGATAGATCTA
ATAATTTACTGGCTCTGGGTTTGTTCAGTCACTACATTGCAGCAAATGAGA
TTAGAGCATAGTTGTGGGAGGGAAGGAGGTGACGCAGCAATCTATTTGC
ACCTAGAAATTTTAGGCAAGTGATAGCTGCGTAATCATACTGCGGCACC
GTTTTTTTCTTGACAGCAGTAGCTGCTTGCAGGAGGAGGTCTGCCCAGTGA
GCTCTCTGCAGTCTCCGGCTCTCTCCTGCAGGATCGGTCAACGCAGCCGT
CGCCGCCCTCTGCACCCAGCCCAGGTGCGCCACTGCTTCAGTCCGGTTCTC
AAAGCCTCAGCACCATCTTTTATCCCCGAGCAGCCTGGATCGTCGTTCCC
TCAGTCCGGACGCCACTGCTAGGTCCGACCACCGCCGCTTCTGATATTC
GGTGAGTCTTTTCTGTGGAGGTTTGGTCTCCCGATCTCTGTGGTAGCCA
CCTTAGGCGTGTACGGTCCCTTGAAAAATGGCCGAGTCAGAGAACC
AGGAGCTGTGAGAATCCAGTCAAGAAGAGGCTGGTAATCAGATAATGGT
GGAAGGGCTCGGGGAACATCTGGAGCGCGGTGAAGATGCCGCTGCTGG
GCTTGGAGACGATGGGAAGTGCAGTGAAGAAGCTGCCGCTGGGCTTGG
GGAAGAAGGGGAAAACGGTGAAGATACTGCTGCTGGGTCCGGGGAAGA
TGGGAAAAAAGGTGGCGATACTGATGAGGACTCAGAGGCAGACCGTCC
AAAAGGACTTATC
GGTTATGTTTTAGATACAGACTTTGTTGAAAGTCTACCTGTGAAAGTTAA
GTACCGTGTGTTAGCCCTTAAAAAGCTTCAAACCTAGAGCGGCCAATTTA
GAATCCAAATTCCTGAGGGAATTTTCATGACATTGAAAGAAAGTTTGCTG
AAATGTACCAACCCTTACTGGAAAAAAGACGTGAGATCATCAATGCAAT
CTATGAACCTACAGAAGAGGAATGTGAATATAAATCAGACTCTGAGGAC
TGTGATGATGAGGAAATGTGTCATGAAGAGATGTATGGTAATGAGGAGG
GTATGGTACATGAATATGTGGATGAGGACGATGGTTATGAGGACTATTA
TTATGATTATGCTGTGGAAGAGGAGGAGGAGGAGGAGGAGGAGGACGA
CATTGAGGCTACTGGAGAAGAGAATAAAGAAGAGGAGGATCCTAAGGG
AATTCCTGATTTTTGGCTAACTGTTTTAAAAAACGTTGATACACTCACTC
CTTTGATTAAGAAATATGATGAGCCTATTCTGAAGCTCCTGACAGATATT
AAAGTTAAGCTTTCAGATCC

FIG. 9

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TGGCGAGCCCCTCAGTTTCACACTAGAATTTCACTTCAAACCCAATGAAT
ATTTCAAAAATGaGTTGTTGACAAAGACCTATGTGCTGAAGTCAAAGCTA
GCATATTATGATCCCCATCCCCTATAGGGGAACTGCGATTGAGTATTCCAC
AGGCTGTGAGATAGATTGGAATGAAGGAAAGAATGTCACTTTGAAAACC
ATCAAGAAGAAACAGAAACATCGGATCTGGGGAACAATCCGAAGTGTAA
CTGAAGATTTTCCCAAGGATTCATTTTTCAATTTTTTCTCTCCTCATGGAA
TCACCTCAAATGGAAGGGATGGAAATGATGATTTTTTACTTGGTCACAAT
TTACGTACTTACATAATTCCAAGATCAGTATTATTTTTCTCAGGTGATGCA
CTGGAATCTCAGCAGGAGGGGGTAGTTAGAGAAGTTAATGATGCAATTT
ATGACAAAATTTATTTATGATAATTGGATGGCTGCAATTGAGGAAGTTAAA
GCTTGTGCAAAAACCTTGAGGCATTAGTAGAAGACATTGATCGTTAGA
GCAGAGTATACATGGCCCTGAAATTAACtgCCCTAGATATAGTTACTCAA
GGTATAAGAAgCCTTGTGTTCTGTATTTTTgCTTTGTAGTGTTAGTTAAAAC
ATATGTTTCAAAAATATAAGAAAAGTTCAAAAACATAATTAATTTGACCTT
GAGTTTTAGTAGTAGAATGTTTTCAAGAAATGTACACTGTGGTAAATGAT
TTAAAACACTAGTATAGTGTTGTGTAGCTTAATCCTTCTGAAGTCTTTTTG
TCATGTAGCTATTAATCTGTGGCTATGAAATGATCAGAAATGCTAAGTGA
GATCAATATTTGTTTTGGAAAAAAAATCTTGGGAAACAACCCAAGGGTTTT
CGCTGTTGTTGTTTTCTTTTTCTATTTTTGTTTACTTAGTCCTTTAGCTAG
TGGATTTAATTTTGTGTGCCTGCTTCATTTTGCAATAACAATGCAGTAG
AATTTAAACTTGGATGCTTAAGAGGCCTGCATATAGATAAGAATTTTCAG
GCAAAACTACATTTATTGTTAATAACAGCTTGTTTCATAGGCTCTTGATTT
TATGTAAGTGTGATAAATAATGAAAACCTAGTTATATTGAGGTTATTGTT
TGTCGGTGAAGTGTTAGTCACAGTATTTTCAAAGTTTGCACATATTGTT
CTGTGTAATTGTGTAAGCCATAATTACAGTGTTTAATTCTCTTTTCCTATT
ACATCATTCATTGAAAGTGATCACTTTACCATTTTGAAAAGATATTTTCGT
GTTCTTTCACTGCAAAAATAAAAAGAATAAAAATTTTCAGAGTGTCTCATGG
AATTC

[SEQ ID NO:3]

FIG. 9(CONT.)

HUMAN BPX 5' REGION

ACTTAAAGGAAAAATTTATCTATAAACTGACAGAATTTAGAAATAAATA
 CAACAATATGTAAACAGTTTTAATATCTGTGATAGTAACAAATCTTTAA
 ATCTGGAAAAATAATAGTCACTTAAAATTTTAAAAAATTGTTCAATTAATA
 AATGATCCAAGTTAGAAATATGAACAAAATAAACCTCACCAATAATTAC
 TATAGAGAGGAAATTTTAATTACTGCAAAGCTTTCCATCCTATAAAATACA
 TTATCAAATAGTTTAACCATTTCTTTAATGCTGAGATTTAGATTATTTCCA
 ATTAACTCAAAGCATCAAGCAAATGTTATGATTTCTAAGAATAAACATA
 ACTTTCCATTTTGGCTTTTGTATATATGTATATTTCTAACGGCTGTTAAAG
 CCAGCATTAAGAAGGAGAAGCAGAAAGTCAGTATTGGGACTGGGGTTAT
 TTATAAGCCAGGCAACTGGTTAATTGTGGTTAATTGTCTGGTATGTTTAC
 TAGTCACGTAGTTGTATACACCATACTAGTTTTTTCATCACAGGCCCTCAT
 TCGCCCCCACTGCCATCGGACTTCCTCCTCCTCCCCTCACAGGAAATGTT
 TCGAGAATTTTTTCAACCTAAAATCATATAGCTTGTGAAAAATACCGACAA
 ACATAATATAGAATATTTAAATAACTGACACGCCACCTAAAGACCATCA
 GTGCTAATTCCTGGTGTTTTTAATCTTTGAAGCGTTTGTTTATCAGCTCTT
 CCACCATCCACCTCTCCCCCTCCCCAGGTCCCCGATCTAAAATCAAAGAG
 ATTGATTTAGGATGGGTGGGTGCCTTGTCTTCTCTCATTGTTTCGACATTTT
 AGTTACGTTTTTCTCTGAGCTCTCTGGAAAGCATAAAAGTATAATATCTGT
 TAAAAGTTGGATGAATGAACATAATGAACGCAATGGGATTCCAGAAAACT
 CTGCGGGAGATGGGCTAGAGGACGAGGAGGAGGTGGATGAATCAGCCA
 TGTTAGAGAGCCTGGGAAGGTGAGCAGAGTTGAAAACTTGATAG
 ATCTAATAATTTACTGGCTCTGGGTTTGTCACTACTACATTGCAGCAAA
 TGAGATTAGAGCATAGTTGTGGGAGGGAAGGAGGTGACGCAGCAATCTA
 TTTGCACCTAGAAATTTTAGGCAAGTGATAGCTGCGTAATCATACTGCGG
 CACCGTTTTTTTTCTTGCAGCAGTAGCTGCTTGCGGAGGAGGTCTGCAC
 TGCAGCTCTCTGCAGTCTCCGGCTCTCTCCTGCAGGATCGGTCAACGCAG
 CCGTCGCCGCCCTCTGCACCCAGCCCAGGTGCCACTGCTTCAGTCCGGT
 TCTCAAAGCCTCAGCACCATCTTTTATCCCCGAGCAGCCTGGATCGTCGT
 TCCCTCAGTCCGGACGCCACTGCTAGGTCCGACCACCGCCGCTTCTGATA
 TTTCCGGTGAGTCTTTTCTGTGGAGTTTGGTCTCCCGATCTCTGTGGTA
 GCCACCTTAGGCGTGACGGTCCTTTGAAAA

FIG. 10



FIG. 11A

FIG. 11B

FIG. 11C

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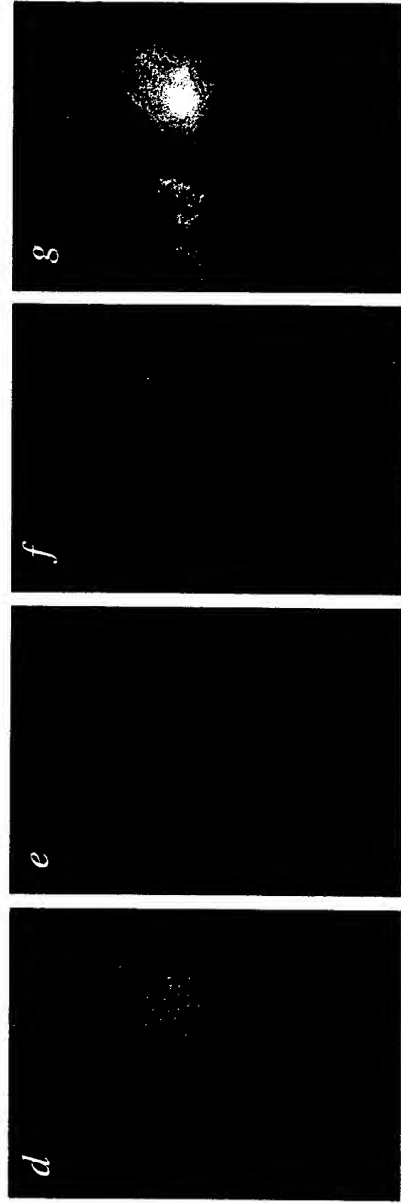


FIG. 11D FIG. 11E FIG. 11F FIG. 11G

GENOMIC STRUCTURE OF THE NAP1L2 GENE

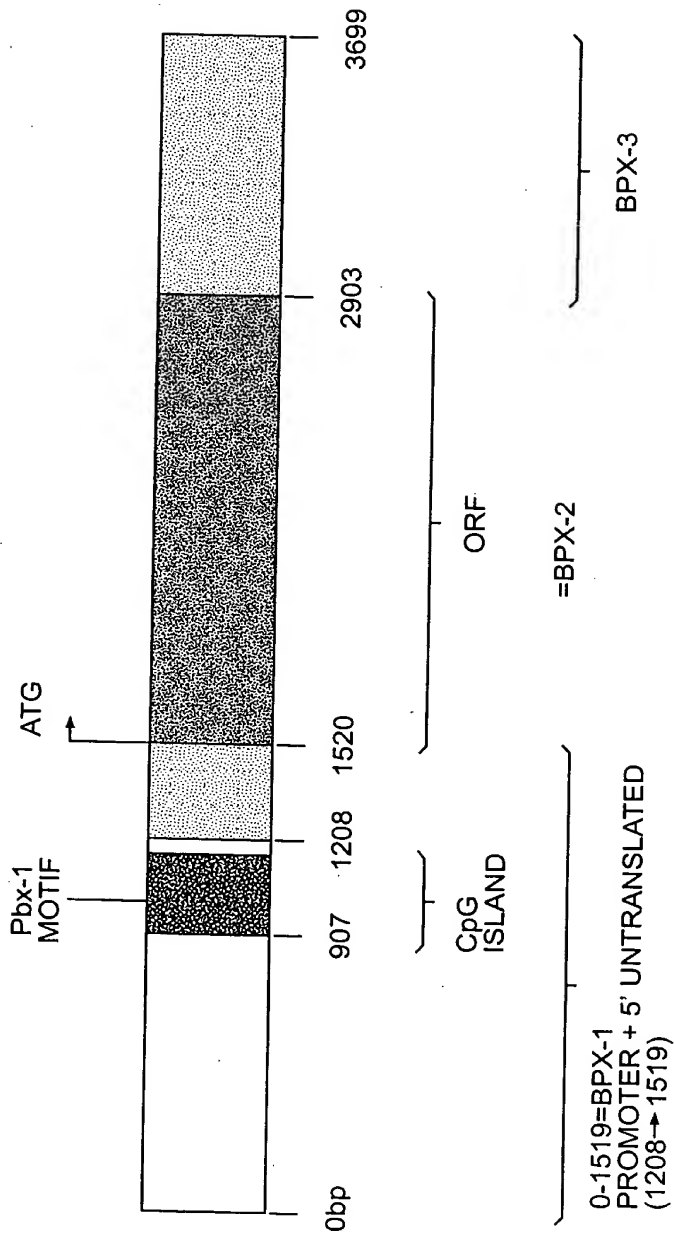


FIG. 12